

seen on a portion of the type specimen. All the material collected is very worn, and it is therefore impossible to describe the species more fully and to ascertain the relationship of the form. It resembles *Milleaster incrustans* Ulrich² from the Miocene of Maryland in general appearance and in the structure of the stellate pores and pseudo-septa, but differs from it in having fewer pores and in not having them elevated; it also differs from the Miocene form in the absence (or inconspicuousness) of two other sets of pores. In *M. incrustans* there is a set of pores, fewer in number than the stellate pores, which occupy the spaces between the stellate apertures; these are a little larger than the stellate pores and are irregular in shape. In the Miocene form there is also a set of very small pores scattered among the granules of the interspaces. It is possible that pores comparable to either or both of these sets were present in the New Jersey specimens, but are not visible because of the worn condition of the material.

Ulrich places another Miocene species tentatively in the genus *Milleaster*. *Milleaster* (?) *subramosus* Ulrich³ also from Maryland consists of a series of stellate pores somewhat resembling those of *M. incrustans*. The larger of the sets of non-septate pores has not been observed, but the smaller set is well represented. As the main argument for placing this form in the genus *Milleaster*, Ulrich relies on the presence of the septate pores. This same argument might be used for placing the Pleistocene species, *Milleaster* (?) *interglacialis* tentatively in that genus also.

Type locality. Two Mile Beach, Cape May County, New Jersey; material obtained from hydraulic fill pumped from 30–55 feet below the bottom of the thorofare back of the island. (Collector, Horace G. Richards.)

Occurrence. Cape May Formation. Two Mile Beach; Holliday Beach (Stone Harbor), New Jersey.

Collection. The type and two additional specimens have been presented to the United States National Museum (type, catalogue number 371911; additional specimens, 371912, 371913).

Remarks. The fauna of the Cape May Formation seems to indicate a milder climate than that prevailing on the New Jersey coast to-day. Because of this mild fauna and for stratigraphic reasons discussed at length in the forthcoming report, the formation has been dated as belonging to the last interglacial stage.

ZOOLOGY.—*A new amphipod of the genus Amphiporeia from Virginia.*¹ CLARENCE R. SHOEMAKER, U. S. National Museum. (Communicated by M. J. RATHBUN.)

In the course of the survey of Chesapeake Bay by the United States Bureau of Fisheries in 1916 a number of amphipods were taken on the

² Maryland Geological Survey, Miocene (1904) p. 436.

³ Loc. cit. p. 437.

¹ Published by permission of the Secretary of the Smithsonian Institution. Received January 12, 1933.

beach between tide marks at Virginia Beach, Virginia. Upon study they appear to belong to the genus *Amphiporeia* which was first taken at Grand Manan, Bay of Fundy, by Dr. Mary J. Rathbun in 1898, and later by the Cheticamp Expedition in 1917 in the Gulf of St. Lawrence. The specimens from Virginia Beach are quite distinct from the northern species, *A. lawrenciana*,² and I now propose the name *Amphiporeia virginiana* for this new species.

The species appears to be very abundant as a large number of specimens were taken, but males apparently are rare, not one having been detected.

Amphiporeia virginiana n. sp.

Description of the female.—Body compressed. Eye small, oval, black. Lateral angle of head evenly rounded. Antenna 1 in the normal deflected position reaching to about the middle of the fifth joint of antenna 2, the geniculation between the first and second joints not very pronounced; first joint robust, about twice as long as high, second and third joints short and subequal in length, flagellum shorter than peduncle and composed of 6 joints, the 2-jointed accessory flagellum about equal in length to the first joint of the primary flagellum. Antenna 2, flagellum shorter than fourth and fifth peduncular joints combined and composed of 7 joints, the first joint of the flagellum being much longer than the succeeding joints and probably representing a fusion of several joints; second peduncular joint with gland-cone small, fourth joint more robust but slightly shorter than fifth. Mandible with cutting edge narrow and bearing several small teeth, accessory cutting plate well developed, 5 spines in spine row, molar prominent and strong and bearing a plumose seta on upper edge, base of molar toward spine-row bearing a small toothed seta and also a small flat tooth with upper truncate, serrate cutting edge, first joint of palp short, second joint very broad and a little longer than third with front margin very convex and densely armed with long slender spines, rear margin slightly convex and bearing a few slender spines, third joint half the width of second and having the distal half of the outer margin densely armed with long slender spines, rear margin also bearing several groups of long slender spines. Maxilla 1 much as in *A. lawrenciana*, inner plate broad and bearing 11 plumose marginal setae, outer plate very obliquely truncate and bearing 11 spine-teeth; palp, second joint broad with 7 spine-teeth and 7 slender setae on rounding apex. Maxilla 2 as in *A. lawrenciana*. Lower lip with lobes short and broad, mandibular processes short and broad, inner lobes well developed. Side-plate 1 very slightly bent forward. Gnathopod 1, sixth joint only slightly shorter than fifth and nearly as wide as long, palm oblique and curving into hind margin of joint without defining angle or defining spines. Gnathopod 2, sixth joint about two-thirds as long as fifth and about two-thirds as wide as long, palm oblique and without defining angle or defining spines, but provided throughout with a lamellar, finely serrate cutting edge. Peraeopods 1 and 2 subequal in length and proportionally alike. Side-plate 4 with shallow emargination on upper hind margin. Peraeopod 3, first joint nearly as long as second, which is nearly as wide as long, fourth joint broadly oval and

² Contrib. Canadian Biol. and Fisheries, 5: no. 10, p. 248. 1929.



Fig. 1. *Amphiporeia virginiana*, new species. Female, *a*, Anterior part of animal. *b*, Mandible. *c*, Molar, cutting plates and spine row of mandible much enlarged. *d*, Maxilla 1. *e*, Palp of maxilla 1 enlarged. *f*, Maxilliped. *g*, Outer plate of maxilliped enlarged. *h*, Lower lip. *i*, Distal end of gnathopod 2 enlarged.

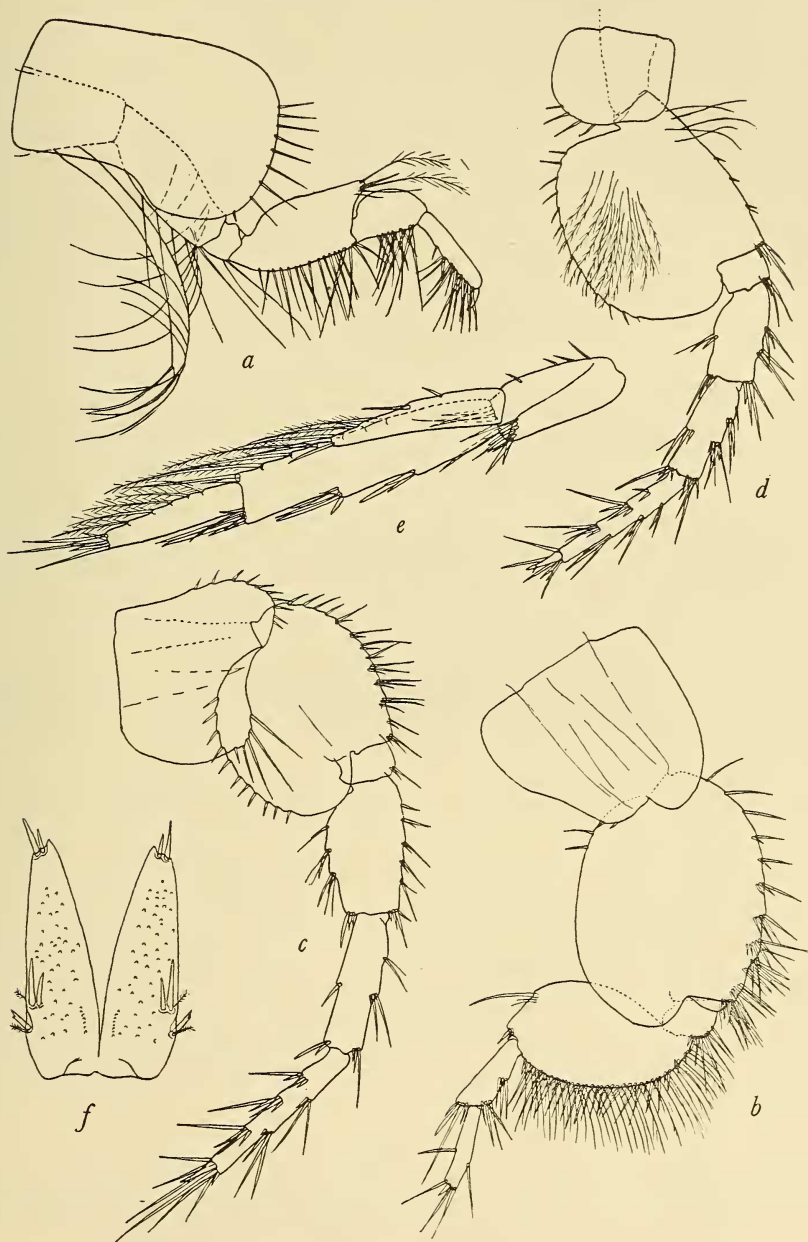


Fig. 2. *Amphiporeia virginiana*, new species. Female, a, Peraeopod 2. b, Peraeopod 3. c, Peraeopod 4. d, Peraeopod 5. e, Uropod 3. f, Telson.

armed on front margin with many long slender spines and setae, fifth and sixth joints equal in length, seventh very short. Peraeopod 4, first joint about as long as second, which is about as broad as long and very broadly expanded posteriorly, fourth and fifth joints equal in length, sixth joint longer and slenderer than fifth, seventh short. Peraeopod 5 shorter than 4, first joint half the length of the second, which is about as wide as long and greatly expanded posteriorly, fourth joint very slightly shorter than fifth, which is shorter than the slender sixth, seventh about one-third the length of the sixth. Pleon segment 3 with posterior lateral margin slightly convex and lower posterior angle evenly and rather broadly rounding. Pleon segment 2 with lower posterior corner more angular than 3. Uropod 2 reaching back as far as the end of the peduncle of uropod 3. Uropod 1 reaching back a little farther than 2. Uropod 3 long and slender, peduncle one-half the length of the first joint but equal in length to the second joint of outer ramus, outer ramus with first joint nearly twice the length of the second, first joint provided on distal half of inner margin with a row of long plumose setae and on outer margin with 2 groups of spines, second joint provided on inner margin with a row of long plumose spines and apically with a group of slender spines; inner ramus about two-thirds the length of the first joint of outer ramus, armed on inner margin with 3 spines and apically with 2 long slender spines. Telson reaching back to about the middle of the inner ramus of uropod 3, about two-thirds as wide as long, dehiscent, lobes tapering gently to the obliquely truncate apices, each of which is armed with 2 short spines, outside margins of lobes each bearing 2 groups of spines and plumose setules near their base, upper surface of telson with many minute tubercles.

Length.—Female, 7.5 mm.

Type locality.—Virginia Beach, Virginia, between tides, July 17, 1916, collected by the U. S. Bureau of Fisheries steamer *Fish Hawk*; female holotype (cat. no. 66074, U.S.N.M.).